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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: CROSS-SECTORAL ISSUES

ENVIRONMENTALLY SOUND MANAGEMENT OF WASTES, PARTICULARLY HAZARDOUS WASTES, AND OF TOXIC CHEMICALS, AS WELL AS PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS AND WASTES: ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTES AND SEWAGE-RELATED ISSUES

Environmentally sound management of solid wastes and sewage-related issues

(Section II, chapter 13 of Agenda 21)

Text submitted by the Chairman on the basis of negotiations held on document A/CONF.151/PC/100/Add.25

I. INTRODUCTION

1. The incorporation of the chapter on environmentally sound management of solid wastes within Agenda 21 is in response to General Assembly resolution 44/228, paragraph 3, in which the Assembly affirmed that the Conference should elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries, and to section I, paragraph 12 (g) of the same resolution, in which the Assembly affirmed that environmentally sound

management of wastes was among the environmental issues of major concern in maintaining the quality of the Earth's environment and especially in achieving environmentally sound and sustainable development in all countries.

2. Programme areas included under the present section and chapter of Agenda 21 are closely related to the following programme areas of other sections of Agenda 21:

(a) Protection of the quality and supply of fresh water resources (sect. II, chap. 10);

(b) Promoting a sustainable pattern of human settlements (sect. I, chap. 6);

(c) Protection of human health conditions (sect. I, chap. 5);

(d) Changing consumption patterns (sect. I, chap. 3).

3. Solid wastes, as defined in this chapter, include all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris. In some countries the solid wastes management system also handles human wastes such as night-soil, septic tank sludge and sludge from sewage treatment plants. If these wastes manifest hazardous characteristics they should be treated as hazardous wastes.

4. Environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of the integrated life cycle management concept which presents a unique opportunity to reconcile development with environmental protection.

5. Accordingly, the framework for requisite action should be founded on a hierarchy of objectives and focused on the four major waste-related programme areas, as follows:

(a) Minimizing wastes;

(b) Maximizing environmentally sound waste reuse and recycling;

(c) Promoting environmentally sound waste disposal and treatment;

(d) Extending waste service coverage.

6. The four programmes are interrelated and mutually supportive and must therefore be integrated in order to provide a comprehensive and environmentally responsive framework for managing municipal solid wastes. The mix and emphasis given to each of the four programme areas will vary according to the local socio-economic and physical conditions, rates of waste generation and waste composition. All sectors of society should participate in all the programme areas.

II. PROGRAMME AREAS

A. Minimizing wastes

Basis for action

7. Unsustainable patterns of production and consumption are increasing the quantities and variety of environmentally persistent wastes at unprecedented rates. The trend could significantly increase the quantities of wastes produced by the end of the century and increase quantities four to fivefold by the year 2025. A preventive waste management approach focused on changes in lifestyles and in production and consumption patterns offers the best chance for reversing current trends.

Objectives

8. The objectives in this area are:

(a) To stabilize or reduce the production of wastes destined for final disposal, over an agreed time-frame, by formulating goals based on waste weight, volume and composition and to induce separation to facilitate waste recycling and reuse;

(b) To strengthen procedures for assessing waste quantity and composition changes for the purpose of formulating operational waste minimization policies utilizing economic or other instruments to induce beneficial modifications of production and consumption patterns.

9. According to the capacities and available resources of their Governments, and with the cooperation of the United Nations and other relevant organizations, as appropriate,

(a) By the year 2000 all industrialized countries ensure sufficient national, regional and international capacity to access, process and monitor waste trend information and implement waste minimization policies;

(b) By the year 2000 all industrialized countries should have in place programmes to stabilize or reduce, if practicable, production of wastes destined for final disposal, including per capita wastes (where this concept applies), at the level prevailing at that date; and developing countries as well should work towards that goal without jeopardizing their development prospects;

(c) By the year 2000 all countries, in particular industrialized countries, should apply programmes to reduce the production of agrochemical wastes.

Activities

(a) Management-related activities

10. Governments should initiate programmes to achieve sustained minimization of waste generation. Non-governmental organizations and consumer groups should be encouraged to participate in such programmes, which could be drawn up with the cooperation of international organizations, where necessary. These programmes should, wherever possible, build upon existing or planned activities and should:

(a) Develop and strengthen national capacities in research and design of environmentally sound technologies, as well as adopt measures to reduce wastes to a minimum;

(b) Provide for incentives to reduce unsustainable patterns of production and consumption;

(c) Develop, where necessary, national plans to minimize waste generation as part of overall national development plans;

(d) Emphasize waste minimization considerations in procurement within the United Nations system.

(b) Data and information

11. Monitoring is a key prerequisite for keeping track of changes in waste quantity and quality and their resultant impact on health and the environment. Governments, with the support of international agencies, should:

(a) Develop and apply methodologies for country-level waste monitoring;

(b) Undertake data gathering and analysis, establish national goals and monitor progress;

(c) Utilize data to assess environmental soundness of national waste policies as a basis for corrective action;

(d) Input information into global information systems.

(c) International and regional cooperation and coordination

12. The United Nations and intergovernmental organizations, with the collaboration of Governments, should help promote waste minimization by facilitating greater exchange of information, know-how and experience. The following is a non-exhaustive list of specific activities that could be undertaken:

(a) Identifying, developing and harmonizing methodologies for waste monitoring and transferring such methodologies to countries;

(b) Identifying and further developing the activities of existing information networks on clean technologies and waste minimization;

(c) Undertaking periodic assessment, collating and analysing country data and reporting systematically, in an appropriate United Nations forum, to the countries concerned;

(d) Reviewing effectiveness of all waste minimization instruments and identifying potential new instruments that could be used and techniques by which they could be made operational at the country level. Guidelines and codes of practice should be developed;

(e) Undertaking research on the social and economic impacts of waste minimization at the consumer level.

Means of implementation

(a) Financial and cost evaluation

13. [It is suggested that industrialized countries invest 1 per cent of the revenues derived from total annual solid wastes and sewage towards waste minimization. At current levels this would amount to about $6.5 billion annually, of which $1.8 billion is required for minimizing municipal solid wastes.]

(b) Scientific and technological means

14. Waste minimization technologies and procedures will need to be identified and widely disseminated. This work should be coordinated by national Governments with the cooperation and collaboration of non-governmental organizations, research institutions and appropriate organizations of the United Nations and could include the following:

(a) Undertaking a continuous review of the effectiveness of all waste minimization instruments and identifying potential new instruments that could be used and techniques by which instruments could be made operational at the country level. Guidelines and codes of practice should be developed;

(b) Promoting waste prevention and minimization as the principal objective of national waste management programmes;

(c) Promoting public education and a range of regulatory and non-regulatory incentives to encourage industry to change product design and reduce industrial process wastes through cleaner production technologies and good housekeeping practices and to encourage industries and consumers to use types of packaging that can be reused, in particular refillable and recyclable packaging;

(d) Execute, in accordance with national capacities, demonstration and pilot programmes to optimize waste minimization instruments;

(e) Establish procedures for adequate transport, storage conservation and management of agricultural products, foodstuffs and other perishable goods in order to reduce loss of these products, which results in the production of solid waste;

(f) Facilitate the transfer of waste reduction technologies to industry, particularly in developing countries and establish concrete national standards for effluents and solid waste, taking into account, inter alia, raw material use and energy consumption.

(c) Human resources development

15. Human resources development for waste minimization not only should be targeted at professionals in the waste management sector but also should seek to obtain the support of citizens and industry. Human resources development programmes must therefore aim to raise consciousness and educate and inform concerned groups. Countries should incorporate within school curricula the principles and practices of preventing and minimizing wastes and material on the environmental impacts of waste.

B. Maximizing environmentally sound waste reuse and recycling

Basis for action

16. The exhaustion of traditional disposal sites, stricter environmental controls governing waste disposal and increasing quantities of more persistent wastes, particularly in industrialized countries, have all contributed to a rapid increase in the cost of waste disposal services. Costs could double or triple by the end of the decade. Some current disposal practices pose a threat to the environment. As the economics of waste disposal services change, waste recycling and resource recovery are becoming increasingly cost-effective. Future waste management programmes should take maximum advantage of resource-efficient approaches to control of wastes. These activities should be carried out in conjunction with public education programmes. It is important that markets for products from reclaimed materials be identified in the development of recycling programmes.

Objectives

17. One objective is to strengthen and increase national waste recycling systems.

18. Another objective is to create a model internal waste recycling programme for waste streams, including paper within the United Nations system.

19. A third objective is to make available information, techniques and appropriate policy instruments to encourage and make operational waste recycling schemes.

20. According to the capacities and available resources of their Governments, and with the cooperation of the United Nations and other relevant organizations, as appropriate,

(a) By the year 2000 countries should promote sufficient financial and technological capacities at the regional, national and local levels, as appropriate, to implement waste recycling policies and actions;

(b) By the year 2000 all industrialized countries and by the year 2010 all developing countries should have a national programme, including to the extent possible targets for efficient waste recycling.

Activities

(a) Management-related activities:

21. National Governments and institutions and non-governmental organizations, together with consumer, women's and youth groups, in collaboration with appropriate organizations of the United Nations, should launch programmes to demonstrate and make operational enhanced waste reuse and recycling. These programmes should, wherever possible, build upon existing or planned activities and should:

(a) Develop and strengthen national capacity to reuse and recycle an increasing proportion of wastes;

(b) Review and reform national waste policies to provide incentives for waste recycling;

(c) Develop and implement national plans for waste management that take advantage of, and give priority to, waste recycling;

(d) Modify existing standards or purchase specifications to avoid discrimination against recycled materials, taking into account the saving in energy and raw materials;

(e) Develop public education and awareness programmes to promote the use of recycled products.

(b) Data and information

22. Information and research is required to identify promising socially acceptable and cost-effective forms of waste reuse and recycling relevant to each country. For example, supporting activities undertaken by national and local government in collaboration with the United Nations and other international organizations could include:

(a) Undertaking an extensive review of options and techniques for reuse and recycling all forms of municipal solid wastes. Policies for reuse and recycling should be made an integral component of national and local waste management programmes;

(b) Assessing the extent and practice of waste reuse and recycling operations currently undertaken and identifying ways by which these could be increased and supported;

(c) Increasing funding for research pilot programmes to test various options for reuse and recycling, including the use of small-scale, cottage-based recycling industries; compost production; treated waste-water irrigation; and energy recovery from wastes;

(d) Producing guidelines and best practices for waste reuse and recycling;

(e) Intensifying efforts, at collecting, analysing and disseminating, to key target groups, relevant information on waste issues. Special research grants could be made available on a competitive basis for innovative research projects on recycling techniques;

(f) Identifying potential markets for recycled products.

(c) International and regional cooperation and coordination

23. The international support agencies in general and appropriate United Nations organizations in particular should cooperate with Governments in generating the necessary information and providing the necessary stimulus for encouraging waste reuse and recycling in countries. In particular, the international community should:

(a) Undertake in cooperation with national Governments a periodic review of the extent to which countries reuse and recycle their wastes;

(b) Review the effectiveness of techniques for and approaches to waste recycling and ways of enhancing their application in countries;

(c) Review and update international guidelines for the safe reuse of wastes;

(d) Establish, appropriate programmes to support the small communities' waste recycling industries in developing countries.

Means of implementation

(a) Financial and cost evaluation

24. [If all countries devoted 1 per cent of waste-related municipal revenues to safe waste reuse schemes at current rates those revenues would constitute annual worldwide expenditures of about $8 billion, of which $2.3 billion would be required exclusively for reutilizing solid wastes. It is proposed that the international community direct $0.85 billion to accelerate safe waste reuse in developing countries, of which $0.25 billion relates to solid wastes.]

25. [It is proposed that funding be increased to international organizations to enable them to support these efforts by about $5 million annually. Half of this amount relates to solid wastes.]

(b) Scientific and technological means

26. The transfer of technology should support waste recycling and reuse by the following means:

(a) Including the transfer of recycling technologies, such as machinery for reusing plastics, within bilateral and multilateral technical cooperation and aid programmes;

(b) Developing and improving existing technologies, especially indigenous technologies, and facilitating their transfer under ongoing regional and interregional technical assistance programmes;

(c) Facilitating the transfer of waste reuse and recycling technology.

27. Incentives for waste recycling are numerous. Countries could consider the following options to encourage industry, institutions, commercial establishments and individuals to recycle wastes instead of disposing of them:

(a) Offering incentives to local and municipal authorities that recycle the maximum proportion of their wastes;

(b) Providing technical assistance to informal waste recycling operations;

(c) Applying economic and regulatory instruments, including tax incentives, to support the principle that generators of wastes pay for their disposal;

(d) Providing legal and economic conditions conducive to investments in waste recycling;

(e) Implementing specific mechanisms such as deposit/refund systems as incentives for recycling;

(f) Promoting the separate collection of recyclable parts of household wastes;

(g) Providing incentives to improve the marketability of technically recyclable waste;

(h) Encouraging the use of recyclable materials, particularly in packaging, where feasible;

(i) Encouraging the development of markets for recycled goods by establishing programmes.

(c) Human resources development

28. Training will be required to reorient current waste management practices to include waste reuse and recycling. Governments, in collaboration with United Nations international and regional organizations, should undertake the following indicative list of actions:

(a) Including waste recycling in in-service training programmes as integral components of technical cooperation programmes on urban management and infrastructure development;

(b) Expanding training programmes on water supply and sanitation to incorporate techniques and policies for waste reuse and recycling;

(c) Including the advantages and civic obligations associated with waste recycling in school curricula and relevant general educational courses;

(d) Encouraging non-governmental organizations, community-based organizations and women's, youth and public interest group programmes, in collaboration with local municipal authorities, to mobilize community support for waste recycling through focused community-level campaigns.

(d) Capacity-building

29. Capacity-building to support increased waste recycling should focus on the following areas:

(a) Making operational national policies and incentives for waste management;

(b) Enabling local and municipal authorities to mobilize community support for waste recycling by involving and assisting informal sector waste recycling operations and undertaking waste management planning that incorporates resource recovery practices.

C. Promoting environmentally sound waste disposal and treatment

Basis for action

30. Even when wastes are minimized, some wastes will still remain. Even after treatment, all discharges of wastes have some residual impact on the receiving environment. Consequently, there is scope for improving waste treatment and disposal practices such as, for example, avoiding the discharge of sludges at sea. In developing countries the problem is of a more fundamental nature: less than 10 per cent of urban wastes receive some form of treatment and only a small proportion of treatment is in compliance with any acceptable quality standard. Faecal matter treatment and disposal should be accorded due priority given the potential threat of faeces to human health.

Objectives

31. The objective in this area is to treat and dispose safely of a progressively increasing proportion of the generated wastes.

32. According to the capacities and available resources of their Governments and with the cooperation of the United Nations and other relevant organizations, as appropriate,

(a) By the year 2000 all countries should establish waste treatment and disposal quality criteria, objectives and standards based on the nature and assimilative capacity of the receiving environment;

(b) By the year 2000 countries should establish sufficient capacity to undertake waste-related pollution impact monitoring and conduct regular surveillance [including epidemiological surveillance];

(c) By the year 1995 industrialized countries and by the year 2005 developing countries should ensure that at least 50 per cent of all sewage, waste waters and solid wastes are treated or disposed of in conformity with national or international environmental and health quality guidelines;

(d) By the year 2025 countries should dispose of all sewage, waste waters and solid wastes in conformity with national or internatinal environmental quality guidelines.

Activities

(a) Management-related

33. National Governments and institutions and non-governmental organizations together with industries, in collaboration with appropriate organizations of the United Nations, should launch programmes in all parts of the world to improve the control and management of waste-related pollution. These programmes should, wherever possible, build upon existing or planned activities and should:

(a) Develop and strengthen national capacity to treat and safely dispose of wastes;

(b) Review and reform national waste management policies to gain control over waste-related pollution;

(c) Encourage countries to seek waste disposal solutions within their sovereign territory and as close as possible to the sources of origin that are compatible with environmentally sound and efficient management. In a number of countries, transboundary movements take place to ensure that wastes are managed in an environmentally sound and efficient way. Such movements observe the relevant conventions including those that apply to areas that are not under national jurisdiction;

(d) Develop human wastes management plans giving due attention to the development and application of appropriate technologies and the availability of resources for implementation.

(b) Data and information

34. Standard setting and monitoring are two key elements essential for gaining control over waste-related pollution. The following specific activities are indicative of the kind of supportive actions that could be taken by international agencies such as the United Nations Centre for Human Settlements (Habitat), the United Nations Environment Programme and the World Health Organization:

(a) Assembling and analysing the scientific evidence and pollution impacts of wastes in the environment in order to formulate and disseminate recommended scientific criteria and guidelines for environmentally sound management of solid wastes;

(b) Recommending national and, where relevant, local environmental quality standards based on scientific criteria and guidelines;

(c) Including within technical cooperation programmes and agreements the provision for monitoring equipment and for the requisite training in its use;

(d) Establishing an information clearing-house with extensive networks at the regional, national and local levels to collect and disseminate information on all aspects of waste management, including safe disposal.

(c) International and regional cooperation and coordination

35. The international community, as a whole, and especially appropriate United Nations organizations such as the United Nations Centre for Human Settlements (Habitat), the United Nations Environment Programme, the World Health Organization and the United Nations Industrial Development Organization and professional associations should generate the necessary information and provide the necessary stimulus for encouraging the treatment and safe disposal of wastes in all countries. In particular, the international community should:

(a) Identify, develop and harmonize methodologies and environmental quality and health guidelines for safe waste discharge and disposal;

(b) Review and keep abreast of developments and disseminate information on the effectiveness of techniques and approaches to safe waste disposal and ways of supporting their application in countries.

Means of implementation

(a) Financial and cost evaluation

36. [Safe waste disposal programmes are relevant to both developed and developing countries. In developed countries the focus is on improving facilities to meet higher environmental quality criteria, while in developing countries considerable investment is required to build new treatment facilities.]

37. [Safe waste disposal programmes require a total annual investment in developing countries of $15.1 billion, of which $2.7 billion is required exclusively for the safe disposal of solid wastes. If the international community provided one third of this amount, about $3.4 billion annually would be required, of which about $1 billion relates to solid wastes.]

38. [About $5 million annually would be required to strengthen the capacity of international organizations to support these efforts. Half of this amount relates to solid wastes.]

(b) Scientific and technological means

39. Scientific guidelines and research on various aspects of waste-related pollution control will be crucial for achieving the objectives of this programme. Governments, municipalities and local authorities with appropriate international cooperation should:

(a) Prepare guidelines and technical reports on subjects such as the integration of land use planning in human settlements with waste disposal, environmental quality criteria and standards, waste treatment and safe disposal options, industrial waste treatment and landfill operations;

(b) Undertake research on critical subjects such as low-cost, low-maintenance waste-water treatment systems; safe sludge disposal options; industrial waste treatment; and low-technology, ecologically safe waste disposal options;

(c) Transfer technologies on industrial waste treatment processes through transnational corporations and bilateral and multilateral technical cooperation programmes;

(d) Focus on the rehabilitation, operation and maintenance of existing facilities and technical assistance on improved maintenance practices and techniques followed by the planning and construction of waste treatment facilities;

(e) Establish programmes to maximize the source segregation and safe disposal of the hazardous components of municipal solid waste;

(f) Ensure the investment and provision of waste collection facilities with the concomitant provision of water services and with an equal and parallel investment and provision of waste treatment facilities.

(c) Human resources development

40. Training would be required to improve current waste management practices to include safe collection and waste disposal. The following is an indicative list of actions that should be undertaken by Governments in collaboration with international agencies:

(a) Provision of both formal and in-service training focused on pollution control, waste treatment and disposal technologies, and operation and maintenance of waste-related infrastructure. Intercountry staff exchange programmes should also be established;

(b) Undertaking of the requisite training for waste-related pollution monitoring and control enforcement.

(d) Capacity-building

41. Institutional reforms and capacity-building will be indispensable if countries are to be able to quantify and mitigate waste-related pollution. Activities to achieve this objective should include:

(a) Creation and strengthening of independent environmental control bodies at national and local levels. International organizations and donors should support needed upgrading of manpower skills and provision of equipment;

(b) Empowering of pollution control agencies with the requisite legal mandate and financial capacities to carry out their duties effectively.

D. Extending waste service coverage

Basis for action

42. By the end of the century over 2.0 billion people will be without access to basic sanitation, and an estimated half of the urban population in developing countries will be without adequate solid waste disposal services. As many as 5.2 million people, including 4 million children under five years of age, die each year from waste-related diseases. The health impacts are particularly severe for the urban poor. The health and environmental impacts of inadequate waste management, however, go beyond the unserved settlements themselves and result in water, land and air contamination and pollution over a wider area. Extending and improving waste collection and safe disposal services are crucial to gaining control over this form of pollution.

Objectives

43. The overall objective of this programme is to provide health-protecting, environmentally safe waste collection and disposal services to all people. According to the capacities and available resources of their Governments and with the cooperation of the United Nations and other relevant organizations, as appropriate, should ensure that:

(a) By the year 2000 all countries have the necessary technical, financial and human resource capacity to provide waste collection services commensurate with needs;

(b) By the year 2025 all urban populations are provided with adequate waste services;

(c) By the year 2050 full urban waste service coverage is maintained and full rural coverage with sanitation achieved in all rural areas.

Activities

(a) Management-related

44. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) Establish financing mechanisms for waste management service development in deprived areas including appropriate modes of revenue generation;

(b) Apply the "polluter pays" principle where appropriate by setting waste management charges at rates that reflect the costs of providing the service and ensure that those who generate the wastes pay the full cost of disposal in an environmentally safe way;

(c) Encourage institutionalization of communities' participation in planning and implementation procedures for solid waste management.

(b) Data and information

45. Governments in collaboration with the United Nations and international agencies should undertake:

(a) To develop and apply methodologies for waste monitoring;

(b) To assume responsibility for data gathering and analysis in order to establish goals and monitor progress;

(c) To input information into a global information system building upon existing systems;

(d) To strengthen the activities of existing information networks in order to disseminate focused information on the application of innovative and low-cost alternatives for waste disposal to targeted audiences.

(c) International and regional cooperation and coordination

46. Many United Nations and bilateral programmes exist that seek to provide water supply and sanitation services to the unserved. The Water and Sanitation Collaborative Council, a global forum; currently acts to coordinate development and encourage cooperation. Even so, given the ever-increasing numbers of unserved urban poor populations and the need to address, in addition, the problem of solid waste disposal, additional mechanisms are essential to ensure accelerated coverage of urban waste disposal services. The international community in general and selected United Nations organizations in particular should:

(a) Launch a settlement infrastructure and environment programme following the United Nations Conference on Environment and Development to coordinate the activities of all agencies of the United Nations system involved in this area and include a clearing-house for information dissemination on all waste management issues;

(b) Undertake and systematically report on progress in providing waste services to those without;

(c) Review effectiveness of techniques for and approaches to increasing coverage and identify innovative ways of accelerating the process.

Means of implementation

(a) Financial and cost evaluation

47. [Extending waste service coverage to unserved populations is relevant mainly to developing countries. A total annual investment for extending waste service coverage in accordance with the schedule indicated in programme objectives is estimated at $7.5 billion of which $1.6 billion pertains to solid waste service expansion. Assuming one third of these costs was financed by the international community, the concessional assistance requirements would be about $2.6 billion, of which $0.6 billion relates to solid wastes services.]

48. [About $8 million annually will be needed to strengthen the capacity of international organizations to support these efforts. Half of this amount relates to solid wastes.]

(b) Scientific and technological means

49. National Governments and institutions, together with non-governmental organizations, should, in collaboration with appropriate organizations of the United Nations, launch programmes in different parts of the developing world to extend waste services to the unserved populations. These programmes should, wherever possible, build upon and reorient existing or planned activities.

50. Policy changes at the national and local levels could enhance the rate of waste service coverage extension. These changes should include the following:

(a) Giving full recognition to and using the full range of low-cost options for waste management including, where appropriate, their institutionalization and incorporation within codes of practice and regulation;

(b) Assigning high priority to the extension of waste management services, as necessary and appropriate, to all settlements irrespective of their legal status giving due emphasis to meeting the waste disposal needs of the unserved, especially the unserved urban poor;

(c) Integrating the provision and maintenance of waste management services with other basic services such as water-supply and storm-water drainage.

51. Research activities could be enhanced. Countries, in cooperation with appropriate international organizations and non-governmental organizations should, for instance:

(a) Find solutions and equipment for managing wastes in areas of concentrated populations. In particular, there is a need for appropriate refuse storage and collection systems and cost-effective and hygienic human waste disposal options;

(b) Prepare and disseminate guidelines, case-studies, policy reviews and technical reports on appropriate solutions and modes of service delivery to unserved low-income areas;

(c) Launch campaigns to encourage active community participation involving women's and youth groups in management of waste, particularly household waste;

(d) Promote intercountry transfer of relevant technologies, especially technologies for high-density settlements.

(c) Human resources development

52. International organizations and national and local Governments, in collaboration with non-governmental organizations, should provide focused training on low-cost waste collection and disposal options, particularly techniques for their planning and delivery. Intercountry staff exchange programmes among developing countries could form part of such training. Particular attention should be given to upgrading the status and skills of management-level personnel in waste management agencies.

53. Improvements in management techniques are likely to yield the greatest returns in terms of improving waste management service efficiency. The United Nations, international organizations and financial institutions should, in collaboration with national and local Governments, develop and render

operational management information systems (MIS) for municipal record keeping and accounting and for efficiency and effectiveness assessment.

(d) Capacity-building

54. National Governments and institutions and non-governmental organizations, with the collaboration of appropriate organizations of the United Nations, should develop capacities to implement programmes to provide waste collection and disposal services to the unserved populations. Some activities under the programmes should include the following:

(a) Establishing a special unit within current institutional arrangements to plan and deliver services to the unserved poor communities with their involvement and participation;

(b) Making revisions to existing codes and regulations to permit the use of the full range of low-cost alternative technologies for waste disposal.

(c) Building institutional capacity and developing procedures for undertaking service planning and delivery.

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SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES

(Section II, Chapter 14 of Agenda 21)

Text submitted by the Chairman on the basis of negotiations held on document A/CONF.151/PC/100/Add.4

PROGRAMME AREA

PROMOTE THE SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES

Basis for action

1. Radioactive wastes are generated in the nuclear fuel cycle as well as in nuclear applications (the use of radionuclides in medicine, research and industry). The radiological and safety risk from radioactive wastes vary from very low in short-lived, low-level wastes up to very large for high-level wastes. Annually about 200,000 m^3 of low-level and intermediate-level waste and 10,000 m^3 of high-level waste (as well as spent nuclear fuel destined for final disposal) is generated world wide from the nuclear power production. These volumes are increasing as more nuclear power units are taken into

operation, nuclear facilities are decommissioned and the use of radionuclides increases. The high-level waste contains about 99 per cent of the radionuclides and thus represents the largest radiological risks. The waste volumes from nuclear applications are generally much smaller, typically some tens of cubic metres or less per year and country. However, the activity concentration, especially in sealed radiation sources, might be high, thus justifying very stringent radiological protection measures. The growth of waste volumes should continue to be kept under close review.

2. The safe and environmentally sound management of the radioactive wastes, including their minimization, transportation and disposal, is important, given their characteristics. In most countries with a substantive nuclear power programme technical and administrative measures have been taken to implement a waste management system. In many other countries, still only in preparation for a national nuclear programme or with only nuclear applications, such systems are still needed.

Objective

3. To ensure that radioactive wastes are safely managed, transported, stored and disposed of, with a view to protecting human health and the environment, within a wider framework of an interactive and integrated approach to radioactive waste management and safety.

Activities

Management-related:

4. States, in cooperation with relevant international organizations where appropriate, should undertake the following activities:

(a) To promote policies and practical measures to minimize and limit, where appropriate, the generation of radioactive wastes, and to provide for their safe processing, conditioning, transportation and disposal;

(b) To support efforts within the IAEA to develop and promulgate radioactive waste safety standards or guidelines and codes of practice as an internationally accepted basis for the safe management and disposal of radioactive wastes;

(c) To promote safe storage, transportation and disposal of radioactive wastes, as well as spent radiation sources and spent fuel destined for final disposal, from nuclear reactors, in all countries and in particular in developing countries, by facilitating the transfer of relevant technologies to those countries, and/or the return to the supplier of radiation sources after their use, in accordance with relevant international regulations or guidelines;

(d) To promote proper planning, including where appropriate environmental impact assessment, of safe management of radioactive waste, including emergency procedures, storage, transportation and disposal, prior to and after activities which generate such waste.

International and regional cooperation and coordination:

5. The following activities should be undertaken:

(a) States should strengthen their efforts to implement the Code of Practice for International Transboundary Movement of Radioactive Waste and, under the auspices of IAEA, in cooperation with relevant international organizations dealing with different modes of transport, keep the question of such movements under active review, including the desirability of concluding a legally binding instrument;

(b) States should encourage the London Dumping Convention to expedite work to complete studies on replacing the current voluntary moratorium on disposal of low-level radioactive wastes at sea by a ban, taking into account the precautionary approach, with a view to taking a well informed and timely decision on the issue;

(c) States should not promote or allow the storage or disposal of high-level, intermediate-level and low-level radioactive wastes near the marine environment, unless, following a precautionary approach, it can be ascertained that such a storage or a disposal is unlikely to cause harm to the marine environment or to interfere with other legitimate uses of the sea;

(d) States should not export radioactive wastes to countries which prohibit the import of such wastes, such as the contracting parties to the Bamako Convention, to Lomé IV, or to other relevant conventions, where such prohibition is provided for;

(e) States should respect the decisions taken by parties to other relevant regional conventions dealing with other aspects of safe and environmentally sound management of radioactive wastes.

Means of implementation

[Financial and cost evaluation:

6. The costs at national level to manage and dispose of radioactive wastes are considerable and will vary, depending on the technology used for disposal.

7. An annual cost of about US$ 8 million will be needed to implement this programme through international organizations (mainly IAEA) to further develop international regulations, to promote research policies and international cooperation and to support developing countries to take preventive and corrective action.]

Scientific and technological means:

8. States should undertake the following activities in cooperation with international organizations where appropriate:

(a) To promote research and development of methods for the safe and environmentally sound treatment and disposal of high-level radioactive waste;

(b) To conduct research and assessment programmes concerned with evaluating the health and environmental impact of radioactive waste disposal.

Capacity-building (including human resources development):

9. Assistance to developing countries to establish and/or strengthen radioactive waste management infrastructures - including legislation, organizations, trained manpower and facilities for the handling, processing, storage and disposal of wastes, generated from nuclear applications.

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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: CROSS-SECTORAL ISSUES

ENVIRONMENTALLY SOUND MANAGEMENT OF WASTES, PARTICULARLY HAZARDOUS WASTES, AND OF TOXIC CHEMICALS, AS WELL AS PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS AND WASTES: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES

Environmentally sound management of hazardous wastes [(including prevention of illegal international traffic in hazardous wastes)]

(Section II, chapter 12, of Agenda 21)

Text submitted by the Chairman on the basis of negotiations held on document A/CONF.151/PC/100/Add.24

I. INTRODUCTION

1. Effective control of the generation, storage, treatment, recycling and reuse, transport, recovery and disposal of hazardous wastes is of paramount importance for proper health, environmental protection and natural resource management, and sustainable development.

2. Prevention of the generation of hazardous wastes and the rehabilitation of contaminated sites are the key elements, but they both require knowledge, experienced people, facilities, financial resources, and technical and scientific capacities.

3. The activities outlined in the present chapter are very closely related to, and have implications for, many of the programme areas described in other chapters, so that an overall integrated approach to hazardous waste management is necessary.

[4. There is international concern that part of the international movement of hazardous wastes is being carried out in contravention of existing national legislation and international instruments to the detriment of the environment and public health of all countries, particularly of developing countries.

5. In section I of General Assembly resolution 44/226 of 22 December 1989, the regional commissions were requested to contribute to the prevention of the illegal traffic in toxic and dangerous products and wastes by monitoring and making regional assessments of that illegal traffic and its environmental and health implications; the Assembly also requested the regional commissions to interact among themselves and cooperate with the United Nations Environment Programme (UNEP), with a view to maintaining efficient and coordinated monitoring and assessment of the illegal traffic in toxic and dangerous products and wastes.]

Overall objective

6. Within the framework of integrated life-cycle management, the overall objective is to prevent to the extent possible, and minimize, the generation of hazardous wastes, as well as to manage the wastes in such a way that they do not cause harm to health and the environment.

Overall targets

7. The overall targets are as follows:

(a) Prevention or minimization of the generation of hazardous wastes as part of an overall integrated cleaner production approach; elimination or reduction to a minimum of transboundary movements of hazardous wastes, consistent with the environmentally sound and efficient management of those wastes: and ensuring that environmentally sound hazardous waste management options are pursued to the maximum extent possible within the country of

origin (the self-sufficiency principle). The transboundary movements that take place should be based on environmental and economic grounds and upon agreements between the States concerned, including riparian States where appropriate. This takes into account the needs of developing countries and the special difficulties faced by small island States in disposing of some hazardous wastes in an environmentally sound manner;

(b) Ratification of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the expeditious elaboration of related protocols, such as the protocol on liability and compensation, mechanisms and guidelines to facilitate the implementation of the Convention;

(c) Ratification and full implementation by the countries concerned of the Bamako Convention on the Ban on the Import into Africa and Control of Transboundary Movement of Hazardous Wastes within Africa and the expeditious elaboration of a protocol on liability and compensation;

(d) Full respect for the decisions taken by the countries parties to conventions, such as the Bamako Convention, and the Fourth Lomé Convention, that prohibit the import of hazardous wastes into developing countries.

8. The following programme areas will be dealt with:

(a) Promotion of hazardous waste prevention and minimization;

(b) Promotion and strengthening of institutional capacities in hazardous waste management;

(c) Promotion and strengthening of international cooperation in the management of transboundary movements of hazardous wastes;

[(d) Prevention of illegal international traffic in hazardous wastes.]

II. PROGRAMME AREAS

A. PROMOTION OF HAZARDOUS WASTE PREVENTION AND MINIMIZATION

Basis for action

9. Human health and environmental quality are being continually degraded by the increasing amount of wastes being produced. There are increasing direct and indirect costs to society and to individual citizens in connection with the generation, handling and disposal of wastes. It is therefore crucial to enhance knowledge and information on the economics of prevention and management of hazardous wastes, including the impact in relation to the employment and environmental benefits, in order to ensure that the necessary capital investment is made available in development programmes through economic incentives. One of the first priorities in waste management is

minimization, as part of a broader approach to change industrial processes and consumer patterns through pollution prevention and cleaner production strategies.

10. Among the most important factors in these strategies is the recovery of wastes and their tranformation into useful material. Technology application, modification and development of new low waste technologies is therefore currently a central focus of waste minimization.

Objectives

11. The objectives of this programme are:

(a) To reduce the generation of hazardous wastes, to the extent feasible, as part of an integrated cleaner production approach;

(b) To optimize the use of materials by utilizing, where practicable and environmentally sound, the residues from production processes;

(c) To enhance knowledge and information on the economics of prevention and management of hazardous wastes.

12. To achieve the objectives, and thereby reduce the impact and cost of industrial development, countries that can afford to adopt the requisite technologies without detriment to their development should establish policies that include:

(a) The integration of cleaner production approaches and waste minimization in all planning, and the adoption of specific goals;

(b) Promotion of the use of regulatory and market mechanisms;

(c) Establishment of an intermediate goal for the stabilization of the quantity of hazardous waste generated;

(d) Establishment of long-term programmes and policies including targets where appropriate for reducing the amount of hazardous waste produced per unit of manufacture;

(e) Achievement of a qualitative improvement of waste streams, mainly through activities aimed at reducing their hazardous characteristics;

(f) Facilitating the establishment of cost-effective policies and approaches to hazardous waste prevention and management, taking into consideration the state of development of each country.

Activities

(a) Management-related activites

13. The following activities should be undertaken:

(a) Governments [Throughout this document the term "Governments" also refers to the European Community acting within its sphere of competence.] should establish or modify standards or purchasing specifications to avoid discrimination against recycled materials, provided they are environmentally sound;

(b) Governments, according to their possibilities and with the help of multilateral cooperation, should provide economic or regulatory incentives to stimulate industrial innovation towards cleaner production methods, to encourage industry to invest in preventive and/or recycling technologies so as to ensure environmentally sound management of all hazardous wastes, including recyclable wastes, and to encourage waste minimization investments;

(c) Governments should intensify research and development activities on cost-effective alternatives for processes and substances that currently result in the generation of hazardous wastes that pose particular problems for environmentally sound disposal or treatment, the possibility of ultimate phase-out to be considered as soon as practicable. Emphasis should be given to alternatives that could be economically accessible to developing countries;

(d) States, with international, bilateral or multilateral assistance where requested, should support the establishment of domestic facilities to handle hazardous wastes of domestic origin;

(e) [Governments of developed countries should provide a range of incentives to encourage industry to transfer environmentally sound technologies and know-how on clean technologies and low-waste production to developing countries on preferential and non-commercial terms, which will bring about changes to sustain innovation. Governments should cooperate with industry to develop guidelines and codes of conduct, leading to cleaner production through sectoral trade industry associations.]

(f) Governments should encourage industry to treat, recycle and dispose of wastes at the source of generation, or as close as possible thereto, whenever waste generation is unavoidable and when it is both economically and environmentally efficient to do so;

(g) Governments should encourage technology assessments, for example through the use of technology assessment centres;

(h) Governments should promote cleaner production through the establishment of centres providing training and information on environmentally sound technologies;

(i) Industry should establish environmental management systems, including environmental auditing of its production or distribution sites, in order to identify where the installation of cleaner production methods is needed;

(j) A relevant and competent international organization should take the lead, in cooperation with other organizations, to develop guidelines for estimating the costs and benefits of various approaches to the adoption of cleaner production and waste minimization and environmentally sound management of wastes, taking into account, where appropriate, the report of the Nairobi meeting of government-designated experts on an international strategy and an action programme, including technical guidelines for the environmentally sound management of hazardous wastes;

(k) Governments should establish regulations which lay down the industries ultimate responsibility for environmentally sound disposing of the hazardous wastes its activities generate.

(b) Data and information

14. The following activities should be undertaken:

(a) Governments, assisted by international organizations, should establish mechanisms for assessing the value of existing information systems;

(b) Governments should establish nationwide and regional information collection and dissemination clearing houses and networks, which are easy to access and use by Government institutions and industry and other non-governmental organizations;

(c) International organizations, through the UNEP Cleaner Production Programme and the International Cleaner Production Information Clearing House (ICPIC), should extend and strengthen existing systems for collection of cleaner production information;

(d) Promotion of the use and dissemination by all United Nations organs and organizations of information collected through the cleaner production network;

(e) The Organisation for Economic Co-operation and Development (OECD) should, in cooperation with other organizations, undertake a comprehensive survey of, and disseminate information on, experiences of member countries in adopting economic regulatory schemes and incentive mechanisms for waste management and for the use of clean technologies that prevent wastes from being generated;

(f) Governments should encourage industries to be transparent in their operations and provide relevant information to the communities that might be affected by the generation and management of hazardous wastes.

(c) International and regional cooperation and coordination

15. International/regional cooperation should encourage the ratification by States of the Basel and Bamako Conventions and promote the implementation of those Conventions. Regional cooperation will be necessary for the development of similar conventions in regions other than Africa, if so required. [In addition there is a need for effective coordination of international regional and national policies and instruments.] Other activities proposed are:

(a) Strengthening international cooperation in monitoring the transfer to other countries of industries generating hazardous wastes;

(b) [Encouraging large industrial enterprises, including transnational corporations, to conform with the provisions of international and regional environmental standards, guidelines and conventions to the extent that they are applicable to corporate activities, even though not mandatory under national law;]

(c) [Observing all national and local laws and regulations for environmental protection, subject to the overriding responsibility to conform with regional and international standards;]

(d) [Adopting and implementing policies and programmes in accordance with the highest practicable industry-agreed guidelines;]

(e) [Addressing in future environmental instruments the rights and responsibilities of transnational corporations;]

(f) Cooperating in monitoring the effects of the management of hazardous wastes.

Means of implementation

(a) Financing and cost evaluation

16. [It is estimated that the annual cost of improving the national capacity of developing countries through contributions from the international community and industry to implement this programme area will be approximately $740 million. This includes the establishment of national centres to promote cleaner production activities, research and training activities and activities related to the use of economic instruments in waste management, amounting to about $380 million per year, and the launching of demonstration projects for about $360 million per year. This amount may depend on the rate of implementation of such projects at the country level; the participation of the industry should be an integral part of implementation.]

17. [The annual cost of strengthening international institutions, including their activities on the strengthening of information exchange systems and the enhancement of knowledge and information on the economics of prevention and management of hazardous wastes, will be about $10 million.]

(b) Technology development and research

18. The following activities should be undertaken:

(a) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, and industries, as appropriate, should significantly increase financial support for "cleaner technology R&D programmes", including the use of biotechnologies;

(b) States, with the cooperation of international organizations where appropriate, should encourage industry to promote and undertake research into the phase-out of those processes that pose the greatest environmental risk based on the hazardous wastes generated;

(c) States should encourage industry to develop schemes to integrate the cleaner production approach into the design of products and their management practices;

(d) States should encourage industry to exercise environmentally responsible care through waste reduction and by ensuring the environmentally sound reuse, recycling and recovery of hazardous wastes, as well as their final disposal.

Human resources development

19. The following activities should be undertaken:

(a) Governments, international organizations and industry should encourage industrial training programmes, incorporating waste prevention and minimization techniques and launching demonstration projects at the local level to develop "success stories" in cleaner production;

(b) Industry should integrate cleaner production principles and case examples into training programmes and establish demonstration projects/networks by sector/country;

(c) All sectors of society should develop cleaner production awareness campaigns and promote dialogue and partnership with industry and other actors.

Capacity-building

20. The following activities should be undertaken:

(a) Governments of developing countries, in cooperation with industry and with the cooperation of appropriate international organizations, should develop inventories of hazardous waste production, in order to identify their needs with respect to technology transfer and implementation of measures for the sound management of wastes and their disposal;

(b) Governments should include in national planning and legislation an integrated approach to environmental protection, driven by prevention and source reduction criteria, based on the polluter-pays principle, and adopt programmes for hazardous waste reduction, including targets and adequate environmental control;

(c) Governments should work with industry on sector-by-sector cleaner production and waste minimization campaigns, as well as on the reduction of wastes and other emissions;

(d) Governments should take the lead in establishing and strengthening, as appropriate, national procedures for environmental impact assessment to take into account the "cradle to grave" approach to the management of hazardous wastes, to identify options for minimizing the generation of hazardous wastes, through safer handling, storage, disposal and destruction;

(e) Governments, in collaboration with industry and appropriate international organizations, should develop procedures for monitoring the application of the "cradle to grave" approach, including environmental audits;

(f) [Bilateral and multilateral development assistance agencies should substantially increase funding for cleaner technology transfer to developing countries and economies in transition, including small- and medium-sized enterprises.]

B. PROMOTION AND STRENGTHENING OF INSTITUTIONAL CAPACITIES IN HAZARDOUS WASTE MANAGEMENT

Basis for action

21. Many countries lack the national capacity to handle and manage hazardous wastes. This is primarily due to inadequate infrastructure, deficiencies in regulatory frameworks, insufficient education and training programmes and lack of coordination between the different ministries and institutions involved in various aspects of waste management. In addition, there is a lack of knowledge about environmental contamination and pollution and the associated health risk from the exposure of populations, especially women and children, and ecosystems to hazardous wastes, the assessment of risks and the characteristics of wastes. Steps need to be taken immediately to identify populations at high risk and to take remedial measures, where necessary. To ensure environmentally sound management of hazardous wastes, one of the main priorities is to provide awareness, education and training programmes to cover all levels of society. There is also a need to undertake research programmes to understand the nature of hazardous materials, to identify their potential environmental effects and to develop technologies to safely handle these wastes. Finally, there is a need to strengthen the capacities of institutions which are responsible for the management of hazardous wastes.

Objectives

22. The objectives in this programme area are as follows:

(a) To adopt appropriate coordinating, legislative and regulatory measures at the national level for the environmentally sound management of hazardous wastes, including the implementation of international and regional conventions;

(b) To establish public awareness and information programmes on hazardous waste issues and to ensure that basic education and training programmes are provided for industry and government workers in all countries;

(c) To establish comprehensive research programmes on hazardous wastes in countries;

(d) To strengthen service industries to enable them to handle hazardous materials, and to build up international networking;

(e) To develop endogenous capacities in all developing countries to educate and train staff at all levels in environmentally sound hazardous waste handling, monitoring and environmentally sound management;

(f) To promote human exposure assessment with respect to hazardous waste sites and identify remedial measures required;

(g) To facilitate the assessment of impacts and risks of hazardous wastes on human health and the environment by establishing appropriate procedures, methodologies, criteria and/or effluent guidelines and standards;

(h) To improve knowledge regarding the effects of hazardous wastes on health and the environment;

(i) To make information available to Governments and to the general public on the effects of hazardous wastes, including infectious wastes, on health and the environment.

Activities

(a) Management related

23. The following activities should be undertaken:

(a) Governments should establish and maintain inventories, including computerized inventories, of hazardous wastes and their treatment/disposal sites, as well as of contaminated sites that require rehabilitation, and assess the exposure and the risk to health and the environment; they should also identify the measures required to clean up the disposal sites. Industry should make the necessary information available;

(b) Governments, industry and international organizations should collaborate in developing guidelines and easy-to-implement methods for the characterization and classification of hazardous wastes;

(c) Governments should carry out exposure and health assessments of populations residing near to uncontrolled hazardous waste sites and initiate remedial measures;

(d) International organizations should develop improved health-based criteria, taking into account national decision-making processes, and assist in the preparation of practical technical guidelines for the prevention, minimization and safe handling and disposal of hazardous wastes;

(e) Governments of developing countries should encourage interdisciplinary and intersectoral groups, in cooperation with international organizations and agencies, to implement training and research activities related to evaluation, prevention and control of hazardous waste health risks. Such groups should serve as models to develop similar regional programmes;

(f) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations as appropriate, should encourage as far as possible combined treatment/disposal facilities for hazardous wastes in small and medium-sized industries;

(g) Governments should promote identification and clean-up of sites of hazardous wastes in collaboration with industry and international organizations. Technologies, expertise and financing should be available for this purpose, as far as possible and when appropriate with the application of the polluter-pays principle;

(h) [Governments should ascertain that their military establishments conform with strict environmental norms in their treatment and disposal of hazardous wastes.]

(b) Data and information

24. The following activities should be undertaken:

(a) Governments, international and regional organizations, and industry should facilitate and expand the dissemination of technical and scientific information dealing with the various health aspects of hazardous wastes, and promote its application;

(b) Governments should establish notification systems and registries of exposed populations and adverse health effects and of databases on risk assessments of hazardous wastes;

(c) Governments should endeavour to collect information on those who generate or dispose/recycle hazardous wastes and provide such information to the individuals and institutions concerned.

25. [Large industrial enterprises, including transnational corporations, should:

(a) Maintain up-to-date environmental, health and safety information for all products and processes used throughout the world and distribute the firm's environmental safety manuals to all employees in all working languages;

(b) Monitor effluent and emission discharges at all operations throughout the world and publish aggregate data for major pollutants;

(c) Establish effective information exchange links between controlled affiliates and local businesses, licencees and joint venture partnerships;

(d) Make detailed environmental, health and safety internal standards and procedures easily available to local governments, trade unions and community organizations in order to ensure better preparedness in case of emergency;

(e) Survey national disclosure requirements in all operations and ensure compliance.]

(c) International and regional cooperation and coordination

26. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations as appropriate, should:

(a) Promote and support the integration and operation at a regional and local level as appropriate, of institutional and interdisciplinary groups that collaborate, according to their capabilities, in activities oriented towards strengthening risk assessment, risk management and risk reduction with respect to hazardous wastes;

(b) Support capacity-building and technological development and research in developing countries in connection with human resource development, particular support to be given to consolidate the networks;

(c) Encourage self-sufficiency in hazardous waste disposal in the country of origin to the extent environmentally sound and feasible.

27. [Large industrial enterprises, including transnational corporations, should provide technical assistance to host country Governments on risk assessment, monitoring techniques, hazard analysis and related specialized skills.]

Means of implementation

(a) Financing and cost evaluation

28. [Total costs for management and safe disposal of hazardous wastes are roughly estimated to be about $12 billion per year for OECD countries, $3 billion per year for Eastern Europe and $3.5 billion per year for developing countries. An amount of $500 million per year should be made available through the international community to developing countries for the strengthening of their institutional capacities to safely manage and dispose of their hazardous wastes.]

(b) Scientific and technological means

29. The following activities should be undertaken:

(a) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industry as appropriate, should increase support for hazardous waste research management in developing countries;

(b) Governments, in collaboration with international organizations, should conduct research on the health effects of hazardous wastes in developing countries, including the long-term effects on children and women;

(c) Governments should conduct research aimed at the needs of small- and medium-sized industries;

(d) [Large industrial enterprises, including transnational corporations], Governments and international organizations should expand technological research on environmentally sound hazardous waste handling, storage, transport, treatment and disposal, and hazardous waste assessment, management and remediation

(e) International organizations should identify relevant and improved technologies for handling, storage, treatment and disposal of hazardous wastes.

(c) Human resource development

30. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industry as appropriate, should:

(a) Increase public awareness and information on hazardous waste issues and promote the development and dissemination of public information on hazardous wastes that the general public can understand;

(b) Increase the participation in hazardous waste management programmes of the general public, particularly women, including participation at grass-root levels;

(c) Develop training and education programmes for men and women in industry and government aimed at specific real-life problems - for example, planning and implementing waste minimization programmes, conducting hazardous materials audits or establishing appropriate regulatory programmes;

(d) Promote the training of labour, industrial management and government regulatory staff in developing countries on technologies to minimize and manage hazardous wastes in an environmentally sound manner.

31. The following activities should be undertaken:

(a) Governments, according to their capacities and available resources and with the cooperation of the United Nations, other organizations and non-governmental organizations, should collaborate in developing and disseminating educational materials concerning wastes and their effects on environment and health, for use in schools, by women's groups and by the general public;

(b) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other organizations, should establish or strengthen programmes for the environmentally sound management of hazardous wastes in accordance with, as appropriate, health and environmental standards, and extend surveillance systems to identify adverse effects on populations and the environment of exposure to hazardous wastes;

(c) International organizations should provide assistance to member States for assessing the health and environmental risks resulting from exposure to hazardous wastes, and in identifying their priorities for controlling the various categories or classes of wastes;

(d) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, should promote centres of excellence for training in waste management, building on appropriate national institutions and encouraging international cooperation including through institutional links between developed and developing countries.

(d) Capacity-building

32. [Wherever they operate, multinational companies and other large-scale enterprises should be encouraged to introduce policies and commitments to adopt equivalent or not less stringent standards of operation with reference to waste generation and disposal, while Governments are invited to make efforts to establish regulations that require such standards.]

33. International organizations should provide assistance to member States for assessing the health and environmental risks resulting from exposure to hazardous wastes, and in identifying their priorities for controlling the various categories or classes of wastes.

34. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industries, should:

(a) Support national institutions for dealing with hazardous wastes from the regulatory monitoring and enforcement perspectives, including enabling them to implement international conventions;

(b) Develop industry-based institutions for dealing with hazardous wastes and service industries for handling hazardous wastes;

(c) Adopt technical guidelines for the environmentally sound management of hazardous wastes, and support the implementation of regional and international conventions;

(d) Develop and expand international networking between professionals working in the area of hazardous wastes, and maintain an information flow among countries;

(e) Assess the feasibility of establishing and operating national, subregional and regional hazardous wastes treatment centres. Such centres could be used for education and training, as well as to facilitate and promote the transfer of technologies for the environmentally sound management of hazardous wastes;

(f) Identify and strengthen relevant academic/research institutions or centres for excellence to enable them to carry out education and training activities in the environmentally sound management of hazardous wastes;

(g) Develop a programme for the establishment of national capacities and capabilities to educate and train staff at various levels in hazardous wastes management;

(h) Conduct environmental audits of existing industries to improve in-plant regimes for the management of hazardous wastes.

C. PROMOTION AND STRENGTHENING OF INTERNATIONAL COOPERATION IN THE MANAGEMENT OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES

Basis for action

35. In order to promote and strengthen international cooperation in the management, including control and monitoring, of transboundary movements of hazardous wastes, a precautionary approach should be applied. There is a need to harmonize the procedures and criteria used in various international and legal instruments. There is also a need to develop or harmonize existing criteria for identifying wastes dangerous to the environment and to build monitoring capacities.

Objectives

36. The objectives are as follows:

(a) To facilitate and strengthen international cooperation in the environmentally sound management of hazardous wastes, including control and monitoring of transboundary movements of such wastes, including wastes for recovery, by using internationally adopted criteria to identify and classify hazardous wastes and to harmonize relevant international legal instruments;

(b) To adopt a ban on or prohibit, as appropriate, the export of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way, or that have banned the import of such wastes;

(c) To promote the development of control procedures for the transboundary movement of hazardous wastes destined for recovery operations under the Basel Convention that encourage environmentally sound recycling options.

Activities

(a) Management-related activities

(i) Strengthening and harmonization of criteria and regulation

37. Governments, according to their capacities and available resources and with the cooperation of United Nations and other relevant organizations, as appropriate, should:

(a) Incorporate the notification procedure called for in the Basel Convention and relevant regional conventions, as well as in their annexes, into national legislation;

(b) Formulate, where appropriate, regional agreements such as the Bamako Convention regulating the transboundary movement of hazardous wastes;

(c) Help promote the compatibility and complementarity of such regional agreements with international conventions and protocols;

(d) Strengthen national and regional capacities and capabilities to monitor and control the transboundary movement of hazardous wastes;

(e) Set up, at national and regional levels, systems for monitoring and surveillance of the transboundary movements of hazardous wastes;

(f) Develop guidelines for the assessment of environmentally sound treatment of hazardous wastes;

(g) Develop guidelines for the identification of hazardous wastes at the national level, taking into account existing internationally and, where appropriate, regionally agreed criteria and prepare a list of hazard profiles for the hazardous wastes listed in national legislation;

(h) Develop and use appropriate methods for testing, characterizing and classifying hazardous wastes and adopt or adapt safety standards and principles for managing hazardous wastes in an environmentally sound way.

(ii) Implementation of existing agreements

38. Governments are urged to ratify the Basel Convention and the Bamako Convention, as applicable, and to pursue the expeditious elaboration of related protocols, such as protocols on liability and compensation, and of mechanisms and guidelines to facilitate the implementation of the conventions.

(b) International and regional cooperation and coordination

39. International organizations should cooperate with developing countries in strengthening their institutional and regulatory capacities in order to prevent the illegal transboundary movement of hazardous wastes.

Means of implementation

(a) Financing and cost evaluation

40. [Because this programme area covers a relatively new field of operation and because of the lack so far of adequate studies on costing of activities under this programme, no cost estimate is available at present. However, the costs for some of the activities related to capacity-building that are presented under this programme could be considered covered under the costing of programme area B above.

41. The Interim Secretariat for the Basel Convention should undertake studies in order to arrive at a reasonable cost estimate for activities to be undertaken initially until the year 2000.]

(b) Capacity-building

Adoption of normative measures

42. Governments, according to their capacities and available resources and with the cooperation of United Nations and other relevant organizations, as appropriate, should:

(a) Elaborate or adopt policies for the environmentally sound management of hazardous wastes, taking into account existing international instruments;

(b) Make recommendations to the appropriate forums or set up or adapt norms, including the equitable implementation of the polluter-pays principle, and regulatory measures to comply with obligations and principles of the Basel Convention, the Bamako Convention and other relevant existing or future agreements, including protocols, as appropriate, for setting appropriate rules and procedures in the field of liability and compensation for damage resulting from the transboundary movement and disposal of hazardous wastes;

(c) Implement policies for the implementation of a ban or prohibition, as appropriate, of exports of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way or that have banned the import of such wastes;

(d) Study, in the context of the Basel Convention and relevant regional conventions, the feasibility of providing temporary financial assistance in the case of an emergency situation, in order to minimize damage from accidents arising from transboundary movements of hazardous wastes or during the disposal of those wastes.

[D. PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN HAZARDOUS WASTES

Basis for action

43. The prevention of illegal traffic in hazardous wastes will benefit the environment and public health in all countries, particularly developing countries. It will also help to make the Basel Convention and regional international instruments, such as the Bamako Convention and the Fourth Lomé Convention, more effective by promoting compliance with the controls established in those agreements. Article IX of the Basel Convention specifically addressed the issue of illegal shipments of hazardous wastes. Illegal traffic of hazardous wastes may cause serious threats to human health and the environment and impose a special and abnormal burden on the countries into which the wastes are trafficked.

44. Effective prevention requires the transformation of the genuine concern of countries into action through effective monitoring, enforcement and imposition of severe penalties.

Objectives

45. The objectives of the programme are:

(a) To reinforce national capacities to detect and halt any illegal attempt to introduce hazardous wastes into the territory of any State in contravention of national legislation and relevant international legal instruments;

(b) To assist all countries, particularly developing countries, in obtaining all appropriate information concerning illegal traffic in hazardous wastes;

(c) To cooperate, within the framework of the Basel Convention, in assisting countries that suffer the consequences of illegal traffic.

Activities

(a) Management-related activities

46. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) Adopt, where necessary, and implement legislation to prevent the illegal import and export of hazardous wastes;

(b) Develop appropriate national enforcement programmes to monitor compliance with such legislation, detect and deter violations through appropriate penalties and give special attention to those activities that generate wastes that are the subject of known previous illegal traffic.

(b) Data and information

47. Governments, with the cooperation of non-governmental organizations and other interested parties, should develop as appropriate, an information network and alert system to assist in detecting illegal traffic in hazardous wastes. Local communities and others could be involved in the operation of such a network and system.

48. Governments should cooperate in the exchange of information on illegal transboundary movements of hazardous wastes and should make such information available to appropriate United Nations bodies such as UNEP and the regional commissions.

(c) International and regional cooperation

49. The regional commissions, in cooperation with and relying upon expert support and advice from UNEP and other relevant bodies of the United Nations system, taking full account of the Basel Convention, should continue to monitor and assess the illegal traffic in hazardous wastes, including its environmental, economic and health implications, on a continuing basis, drawing upon the results and experience gained in the joint UNEP/Economic and Social Commission for Asia and the Pacific preliminary assessment of illegal traffic.

50. Countries and international organizations, as appropriate, should cooperate with developing countries in strengthening their institutional and regulatory capacities in order to prevent the illegal import and export of hazardous wastes.]